DOCUMENT RESUME

ED 414 161 SE 060 742

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TITLE Natural Beginnings: A Teacher Training Model for Early Childhood Educators.
SPONS AGENCY Ohio State Environmental Protection Agency, Columbus.
PUB DATE 1995-12-00
NOTE 24p.
PUB TYPE Reports - Descriptive (141)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Activity Units; Class Activities; Classroom Environment; Community Programs; Early Childhood Education; Ecology; *Environmental Education; Habitats; *Inservice Teacher Education; Learning Activities; Partnerships in Education; Preschool Education; *Preschool Teachers; Teaching Methods; Values Education; *Workshops
IDENTIFIERS *Environmental Awareness

ABSTRACT

This paper presents a description of Natural Beginnings, an early childhood environmental education teacher inservice workshop. The purpose, content, and format of the workshop are discussed, as are evaluation results. Evaluation results indicate that the workshop was highly effective in increasing teachers' confidence in infusing environmental education into an early childhood curriculum, fostering teachers' own understanding and appreciation of the natural environment, introducing teachers to environmental education materials and other resources in the community, and fostering partnerships between early childhood educators and environmental education resource professionals. One unique feature of the workshop was the development and field-testing of new environmental education materials (i.e., activity kits and instructional units) appropriate for the early childhood level. In addition to evaluating the effectiveness of the workshop, participant feedback was also used to develop recommendations for similar workshops in the future. Additional benefits resulting from the workshop include increasing parents' and colleagues' interest and involvement in environmental education activities. (Author/PVD)

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ED 414 161

Natural Beginnings

A Teacher Training Model for Early Childhood Educators

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December, 1995

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Notes on Contributor

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Note: This project was supported in part by the Ohio Environmental Education Fund, a program of the Ohio Environmental Protection Agency.

Summary

This paper presents a description of Natural Beginnings, an early childhood environmental education (EE) teacher inservice workshop. The purpose, content and format of the workshop are discussed, as are evaluation results. Such results indicate that the workshop was highly effective in (a) increasing teachers' confidence in infusing EE into an early childhood curriculum, (b) fostering teachers' own understanding and appreciation of the natural environment, (c) introducing teachers to EE materials and other resources in the community, and (d) fostering partnerships between early childhood educators and EE resource professionals. One unique feature of the workshop was the development and field-testing of new EE materials (i.e., activity kits and instructional units) appropriate for the early childhood level. In addition to evaluating the effectiveness of the workshop, participant feedback was also used to develop recommendations for similar workshops in the future. These recommendations are included in the final section of this paper.

Natural Beginnings

A Teacher Training Model for Early Childhood Educators

Overview

In response to the identification of a lack of teacher training as one of the major barriers to the infusion of environmental education (EE) in the school curriculum, a variety of teacher in-service training programs have been developed and implemented (Ham, Rellergert-Taylor, & Krumpe, 1987/88) over the past ten years. Few of these programs, however, are designed for teachers working with preschool children; yet the literature strongly supports the concept that if environmental education is to be optimally effective, it must start at the early childhood level (Carson, 1956; Iozzi, 1989; Tillbury, 1994; Wilson, 1993). To fill this void, Natural Beginnings, an EE inservice program for early childhood educators was developed and evaluated. Following is a description of this program and a discussion of the evaluation outcomes.

Because many teachers feel apprehensive about their own lack of knowledge in EE and related studies (Ham, Rellergert-Taylor, & Krumpe, 1987/88; Sewing, 1986), one of the major objectives of the Natural Beginnings workshop was to increase teachers' confidence in infusing EE into an early childhood curriculum. Related objectives of the workshop included (a) fostering teachers' own understanding and appreciation of the natural environment, (b) introducing teachers to EE materials and other resources in the community, and (c) fostering partnerships between early childhood educators and EE resource professionals.

To accomplish these objectives, a four-day summer (June, 1995) workshop with a one-day follow-up session in the Fall was planned and implemented at Bowling Green State University (BGSU) in Bowling Green,

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Ohio. With funding from the Ohio Environmental Education Fund, a program of the Ohio Environmental Protection Agency, this workshop was provided without cost to 25 early childhood educators.

Recruitment/application process. Announcements about the workshop were disseminated through notices in state and local early childhood education publications and through letters sent to individual preschool teachers. Specific criteria and guidelines for participating were established in advance and shared with interested teachers during the application process. One part of the application packet consisted of a statement of commitment outlining the responsibilities of workshop participants. (See Figure 1.) Applicants were asked to review and sign this commitment statement and, for the purpose of open and clear communication regarding the responsibilities associated with the workshop, asked to secure the signature of their program supervisor or administrator.

Insert Figure 1 About Here

While the initial announcement of the workshop generated 59 inquiries or expressions of interest, only 33 completed applications were submitted. The difference in number between those who initially expressed interest and those who actually applied could possibly be attributed to the commitments related to participation (as outlined in Figure 1). A screening committee was established to review completed applications and make the final selection of workshop participants. The following questions were used in reviewing the applications:

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- Is the applicant currently an early childhood educator or a student in an early childhood teacher training program?
- To what extent does the applicant seem committed to incorporating EE into his or her early childhood program?
- To what extent does the applicant seem capable of developing new materials to enhance EE at the early childhood level?
- To what extent has the applicant outlined a reasonable plan for how he or she would incorporate EE into an early childhood program?
- Has applicant obtained the signature of a supervisor or administrator to support his or her application?

While some of these questions could be answered from the demographic information provided by the applicant (e.g., professional position) and a quick review as to whether or not the required signatures were provided, information relating to the other questions was obtained from Part Two of the application which asked participants to give a brief statement about their reasons for wanting to attend the workshop and their anticipated use of the subject in the future.

From a review of the 33 applications for the Natural Beginnings workshop at BGSU, 1 applicant was determined to be ineligible (i.e., currently not involved in early childhood education). After 25 applicants were chosen for acceptance, the other 7 applicants were put on a waiting list to be contacted in the event of any cancellations.

Incentives. Incentives for participating in the Natural Beginnings workshop included a $200 stipend and a $40 voucher to purchase early childhood EE resource materials. These materials became the property of the individual participants, so as to assist them in building a personal resource library for implementing an EE curriculum in their classrooms

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The $40 materials voucher had the added benefit of encouraging participants to carefully review the many resource materials available, so that they might make the best choices before placing their individual orders.

Format. The workshop program consisted of a series of presentations and demonstrations by environmental educators (i.e., naturalists), teacher educators, and preschool teachers already involved in environmental education. While most of the sessions were conducted on the campus of BGSU, two field trips were also incorporated into the workshop. One trip was to the Toledo Zoo, where participants were introduced to the services available through the Education Department (e.g., EE loan boxes, Zoomobile visits to the schools, etc.). A second field trip was to the Life Lab classroom at Lourdes College in Sylvania, Ohio. The Life Lab is designed as a demonstration site for teachers focusing on how to make EE an on-going part of the daily curriculum. One of the most striking features of the Life Lab classroom is the wide variety of classroom animals (caterpillars, snails, birds, fish, millipedes, etc.) housed in mini-habitats.

Major topics covered throughout the four days of the workshop, as well as the Follow-up Day, are outlined in Figure 2. The topics for Day One were covered primarily by a teacher educator and a preschool director/teacher, both of whom have been involved in EE at the early childhood level for over ten years. Day Two was conducted by a naturalist, who in his capacity as director of a Nature Center, often conducts teacher training workshops as well as providing programs for young children. Day Three was devoted to the two field trips discussed above and the opportunity to begin work on developing EE units and activity kits. During Day Four, participants were introduced to the preschool components of

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Project Learning Tree (a nationally available EE curriculum/teacher inservice workshop), visited the Environmental Yard at the Child Development Center on the BGSU campus, and had the opportunity to discuss partnership plans with several naturalists from the metro and county park districts in the area.

Insert Figure 2 About Here

Special Features. One special feature of the Natural Beginnings workshop was the required commitment on the part of each participant to develop an EE activity kit. A primary purpose for making the development of these kits a part of the workshop was to address the shortage of EE materials that are appropriate for the preschool level. Workshop participants were given the choice of developing either a theme-based "activity box" for use in the classroom or a "book bag" designed as a take-home activity kit to involve families in EE activities.

For the activity boxes, participants were to (a) choose a specific EE concept (e.g., seasons, trees, seeds, pond life, etc.); (b) develop a Guide Sheet (with background information and suggested activities); and (c) provide hands-on materials for implementing the suggested activities. The suggested activities could be designed for group and/or individual use in the classroom. For the book bags, participants were to (a) identify a children's book with a positive environmental message, (b) develop a Guidesheet with background information and suggested activities relating to the book, and (c) provide (in addition to the book, itself) hands-on materials to implement the suggested activities at home.

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Each participant was given $100 to purchase materials for their kits. When completed and field tested, the activity kits became the property of the schools in which the teachers worked. Themes chosen for the activity kits developed during the 1995 Natural Beginnings workshop included trees, water, native animals, the sea shore, seasons, and how things grow.

Another special feature of the Natural Beginnings workshop was the development of Partnership Plans, focusing on the establishment of on-going relationships with community EE resource professionals. To foster these relationships, several community EE resource professionals were invited to make presentations during Day Four of the workshop outlining their services and making suggestions for how early childhood educators might access these services.

Evaluation

Plans for evaluating the impact of the Natural Beginnings workshop included the administration of three different surveys. Survey I, designed as a needs assessment, was administered prior to the summer workshop and included items relating to knowledge, skills, motivation, and current practices in EE at the early childhood level. Survey II was administered immediately after the workshop and focused primarily on participants' perceived benefits from attending the workshop. Survey III was administered five months after the workshop and included items relating to participants' success in implementing their EE plans and infusing EE into their curriculum. Following is a discussion of some of the results of the three different surveys.

A part of the needs assessment (Survey I) consisted of asking applicants to list some of the reasons why they wanted to participate in the Natural Beginnings workshop and what they hoped to gain from it

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Responses to why they wanted to participate included: wanting to share ideas about EE with colleagues and parents; wanting to expand own knowledge base about the environment and about EE; wanting to learn how to develop an understanding and appreciation of nature in young children; and wanting to make better use of community EE resources. In response to the question about what they hoped to gain from the workshop, applicants indicated that they wanted information on how to communicate EE ideas to parents and staff, more skills and confidence in teaching EE, ideas and methods for presenting EE to children with disabilities, increased personal sensitivity and awareness of nature (e.g., "Recharge my love for nature"), interaction with other participants (i.e., networking), ideas on how to use natural items (pine cones, leaves, seeds, etc.) for EE, ideas for long-term projects, and information about indoor vegetation and plant growth.

Another part of the needs assessment asked applicants to indicate what would be most helpful to them for infusing EE into their curriculum. Responses to this item included books, further inservice opportunities, a written list of EE resources and how to access them, outdoor areas geared towards exploration of the natural environment, equipment for exploration (e.g. magnifying glasses, hatcheries, etc.), live animals, information on sources for grants, and hands-on projects.

A summary of the responses from Survey I was shared with the presenters prior to the workshop with the request that they address some of the participants' perceived needs and concerns in their presentations. Feedback from the presenters indicated that this was helpful to them in tailoring their presentations to the audience.

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Survey II included items designed to assess participants' thoughts and feelings regarding the value of the workshop. When asked what parts of the workshop they found most meaningful or helpful, participants' responses included the following: experiencing nature ourselves; information about and the visit to the environmental yard; Project Learning Tree activities; contacts with others and the sense of support gained from this; field trips; exploring the available resource materials; exposure to live animals (e.g., toad, turtle, snails, etc.) and ideas on how to use them in the classroom; and the demonstration on how to use puppets effectively. A comparison of what participants hoped to gain from the workshop and their responses to items on Survey II relating to what they found most meaningful or helpful indicated a healthy overlap between participants' expectations and workshop results.

There were nine items common across all three surveys designed to ascertain change over time in participants' knowledge, attitudes, confidence, and commitment relating to infusing EE into the early childhood curriculum. These items and the mean scores (averages) for each survey are presented in Table 1. As the data indicates, scores increased from Survey I to Survey II and from Survey II to Survey III, indicating that participants felt they gained information, confidence, and a stronger commitment to infusing EE into their curriculum. The largest increases were from Survey I (i.e., the pretest) to Survey II, suggesting immediate benefits from the workshop. Items with the largest increases were items 3 and 6 relating to awareness of EE materials and resource professionals. Items with the smallest increases were 7 and 1, relating to personal priority for infusing EE into the curriculum and level of understanding of the rationale for EE at the early childhood level. As

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indicated in Table 1, these two items received the highest average scores on the pretest (i.e., Survey I), indicating that participants understood and valued the importance of EE for preschoolers prior to the workshop. Large increases in these areas on subsequent surveys were thus not expected.

Insert Table 1 About Here

Other indications of change resulting from the workshop could be found in responses to several items included on both Survey I and III--that is, the survey administered as a pretest before the workshop and the one administered five months after the workshop. These items solicited information about (a) the level of importance the teachers placed on EE in the classroom, (b) recycling practices with children, (c) extent and type of nature-related elements in the classroom and on the playyard, and (d) personal level of environmental sensitivity and/or concern. These items, along with a summary of the responses, are presented in Table 2. As indicated by the data, there were increases in each of these areas. The smallest increase related to the question about nature-related items in the outdoor learning area. This data is consistent with participants' suggestions for future workshops, where they indicated a need for more information on how to develop environmental yards for young children.

Insert Table 2 About Here

Surveys I and III also included items relating to how often the early childhood teachers included the following: (a) EE activities in the classroom, (b) nature-focused field trips, and (c) involvement of EE

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professionals. In each of these areas, participants noted increased activity after the workshop. On Survey I, only four teachers indicated that they provided any EE activities as often as three to five days per week. On Survey III, this number increased to ten. Also, on Survey I, eight respondents indicated that they provided EE activities only "once a month" or "less than once a month." This number decreased to zero on Survey III.

On Survey I, participants were asked to indicate how many nature-focused field trips they took over the past year, and on Survey III, how many such trips they took during the last three months. Results for Survey I indicated that an average of 3.14 nature-focused field trips were taken over a year's time. As reported on Survey III, an average of 3.07 field trips were taken over just a three-month period--i.e., almost as many nature-focused field trips in a three-month period as in the entire previous year, thus suggesting an increase in such field trips as a result of the workshop. A similar question was asked regarding the involvement of EE professionals--i.e., on Survey I participants were asked how many times they had involved EE professionals within the last year, and Survey III how many times over the last three months. Here, too, the results indicated that, as a result of the workshop, more early childhood educators were involving EE professionals in their programs. The average over a year's period prior to the workshop was 1.64 and after the workshop (covering just a three-month period) was 1.28.

In addition to Survey II and III, feedback regarding the workshop was also solicited by way of an open-ended questionnaire asking participants to share their thoughts as to the impact the Natural Beginnings project had on (a) the children with whom they work, (b) the parents/families of children in their programs, and (c) colleagues with

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whom they work. Participants were also asked to give suggestions for future environmental education projects. Following are examples of responses in each of these areas, along with some comments about the establishment of partnerships with community EE professionals and/or programs.

Impact on children. Teachers indicated that children responded to the EE curriculum with interest and enthusiasm. They also indicated that children were very excited, curious, and more aware of the outdoor environment. According to the teachers' reports, children also demonstrated an increased respect for the natural environment and were able to make "connections that carry over to other places (home) and later dates (remembering what they've experienced)." In her report, one of the workshop participants, a principal of an early childhood center, said, "I see their [preschoolers] natural curiosity being supported and extended. I hear new vocabulary from our preschoolers and more casual conversation regarding nature and environmental awareness." One of the teachers from this same center indicated that the children "have an increased desire to explore vs. destroy nature" and that they demonstrate "a great deal of curiosity regarding bugs and insects found during recess time." Another teacher said that she noticed the children developing a strong sense of concern and caring for all living creatures; and that they were learning to live by the motto, "You cannot hurt yourself, your friend or the environment." She indicated that they were also beginning to understand that "a friend means more than that person sitting next to you but also includes all living creatures including those tiny little creatures in the grass."

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One teacher observed that the children are now picking insects up and "studying" them, instead of stepping on them. She also noted that they were asking a lot of questions about animals and making more drawings of them.

Impact on parents/families. Workshop participants indicated that parents/families gained from the EE curriculum by using and enjoying the variety of materials made available through community resources (e.g., zoo loan boxes, pet library, etc.) and by participating in EE-related trips and school activities. One teacher noted that siblings have been coming into the preschool room more frequently to see what's new (e.g., chickens hatching, plants growing, etc.). Parents found the EE book bags interesting and helpful in conducting EE activities at home. A teacher in a parent/child interaction program indicated that parents were interested in exploring nature with their children and sharing their own nature-related experiences with each other and their preschoolers.

Impact on colleagues. In addition to sharing the EE activity kits with other teachers in their programs, several workshop participants also took the initiative to do an inservice presentation about EE with their colleagues. According to feedback from the participants doing such presentations, their colleagues' response was very positive. They indicated that the other teachers loved the activity boxes and, in several cases, were planning to develop more of them on their own. Workshop participants also indicated that their colleagues were becoming more interested in starting recycling projects at the school, having animals in their classrooms, incorporating more EE into their curriculum, and spending more time exploring the out-of-doors. One participant indicated that her colleagues were now studying plants, insects, birds, and other animals that live

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outside their school and homes and introducing these to children rather than focusing on exotic animals of far away places.

Suggestions for future early childhood environmental education projects. Ideas for future EE projects suggested by the participants included: (a) offering more ideas for winter-time activities; (b) conducting the workshop in a more natural environment (e.g., park, camp, etc.); (c) offering an over-night experience; (d) offering a similar workshop every year; (e) providing actual identification of trees and other plants; (f) offering more information and ideas on how to adapt activities and materials for children with disabilities; (g) building into the workshop schedule more time for interaction between participants and with presenters; (h) offering more ideas for music and movement activities; (i) offering ideas on indoor gardening or working with plants indoors; and (j) providing a list of local suppliers of nature-related materials.

Developing partnership plans. Indications of the effectiveness of the workshop in relation to the stated objective of fostering partnerships between early childhood educators and EE resource professionals were obtained through an analysis of the Implementation Plans developed by each of the participants and through responses on Survey I and Survey III relating to linkages with community EE professionals. The participants' plans for linking with community EE professionals and/or programs were ambitious and varied. Programs mentioned for establishing partnerships included the Toledo Zoo, the metroparks, nearby state parks, the county Soil and Water conservation office, privately-owned farms and nurseries in the community, a local wildlife rehabilitation program, and a vocational/agricultural high school program. Several workshop

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participants indicated that they planned to develop a community EE Resource Directory and share this with parents and colleagues.

Another interesting partnership that developed was between several early childhood teachers and high school teachers and students. One preschool teacher looks to a high school advanced biology class for information and answers to the nature-related questions that surface as she implements her EE curriculum. Another teacher, who works as a vocational high school teacher for students interested in careers with young children, also serves as director of the early childhood lab program at the school. Following are several excerpts from a letter she wrote about her EE activities and the partnership with the high school vocational class:

> When I came on the job there was no science program and especially no environmental program for both the preschoolers and the high school students. I began working with the high school students first. . . . We practiced developing our observation skills, walked to the park and the pond to document what we could find and share with the preschoolers, played environmental games, etc. For my high school students we now have a blanket permission slip to walk to the park and pond any time we want to go or need to go. This is a big improvement. The high school now understands that the outdoor environment is a part of our daily learning environment.
>
> My high school students are continually on the look for new creatures to bring to share with the [preschool] children. . . . In the fall when the preschoolers joined us, the children showed a complete disrespect for any living creature. They always wanted to stomp and kill! With the help of the teacher aides and the high school students showing respect for even the smallest living creature, we quickly changed the preschoolers attitudes.
>
> I am continually amazed at how much the High School students are learning. Most of what they are experiencing in the child care center they have never experienced before in their life

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> The high school students are surprised that these activities are being offered to young children when they never had the opportunity in their total eleven years of school life. They are happy for the young children and for themselves that these opportunities are being made available for them.

Summary

Evaluation results indicate that the Natural Beginnings workshop was effective in accomplishing the main objectives of the project, namely (a) increasing teachers' confidence in infusing EE into an early childhood curriculum, (b) fostering teachers' own understanding and appreciation of the natural environment, (c) introducing teachers to EE materials and other resources in the community, and (d) fostering partnerships between early childhood educators and EE resource professionals. Additional benefits resulting from the workshop include increasing parents' and colleagues' interest and involvement in EE activities and the development of new materials for implementing EE at the early childhood level.

Of all the feedback statements made by workshop participants regarding suggestions for the future, the one that was most frequently expressed was the need to offer similar EE workshops on a more frequent basis. As stated by one of the participants, "This type of experience should be a part of every early childhood teacher training program!"; and by another, "You should do this every year!"

To facilitate the replication of this workshop, a Natural Beginnings training guide has been developed and is available through the Ohio Environmental Education Fund, the Ohio Environmental Protection Agency, P.O. Box 1049, 1800 WaterMark Drive, Columbus, OH 43266-0149. Phone 614/644-2873.

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Figure 1
Statement of Commitment

Following is a list of criteria for participating in the Natural Beginnings workshop. Please indicate your commitment by checking each item, signing the form, and securing the signature of your supervisor or administrator of your program.

_____ Commitment to participate in all four days of the scheduled workshop and a one-day follow up session

_____ Commitment to developing and field testing an environmental education activity kit for school or agency

_____ Commitment to pursue the development of an on-going partnership with a community EE resource professional and/or agency

_____ Willingness to participate in a program effectiveness study, primarily by way of questionnaires administered before and after the workshop

_____ Commitment to sharing information about EE resources and ideas with other teachers and parents

_____ Commitment to infusing EE into your early childhood program by introducing nature-related activities and materials in both your indoor and outdoor environments

_____ Commitment to making your early childhood program more environmentally responsible (through recycling, etc.)

If given the opportunity to participate in the Natural Beginnings workshop, I will fulfill all of the above commitments.

Signature _____ Date _____

Signature of supervisor/
administrator of program _____ Date _____

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Figure 2
Workshop Outline

Day One
- Overview of the Workshop
- Rationale, Goals, and Objectives of EE at the Early Childhood Level
- Guidelines and Suggestions for Fostering a Sense of Wonder
- Multicultural Perspectives
- Children's Environmental Literature

Day Two
- Learning About Nature
- Exploring the Natural World
- Animals in the Classroom

Day Three
- Resources Through the Zoo
- Developing a Life Lab Classroom

Day Four
- Project Learning Tree
- Developing an Environmental Yard
- Linking with EE Community Resources

Follow-Up Day
- Show and Tell of Activity Kits
- Sharing Implementation Plans and Experiences

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Table 1
Mean Scores of Survey Items (#1-9)*

	Survey I**	Survey II**	Survey III***
1. I feel that I have a clear understanding of the rationale for environmental education at the early childhood level.	3.80	4.60	4.73
2. I feel comfortable in knowing how to infuse environmental education into an early childhood program.	3.12	4.52	4.59
3. I am aware of many materials available for environmental education at the early childhood level.	2.64	4.64	4.63
4. I feel comfortable in knowing how to develop an environmental education unit for young children.	2.92	4.36	4.82
5. I feel comfortable with my own level of understanding and appreciation of the natural world.	3.12	4.24	4.50
6. I am aware of at least several environmental resource professionals and/or programs in the community that I could use to help me in providing environmental education at the early childhood level.	3.02	4.76	4.77
7. Infusing environmental education into my program is a high priority for me.	4.56	4.80	4.45
8. I feel comfortable in knowing how to make an outdoor play area more nature-focused.	3.00	4.36	4.27
9. I feel comfortable in knowing how to make our program more environmentally responsible.	2.96	4.28	4.41

*Using a scale of 1 to 5 (with 1 = not at all and 5 = very much), participants were asked to indicate to what extent each of the statements matched their current feelings and/or thoughts.

**N = 25

***N=22

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Table 2
Selected Items From Surveys I and III

	Survey I	Survey III
Environmental education is currently a very important part of my program.	3.08*	4.43*
Do you currently involve children in recycling?	44%**	66%**
At the current time, how many different types of nature-related items do you have in your classroom (e.g., living plants, animals, environmental books, displays of realistic animals, etc.)?	5.56***	6.20***
At the current time, how many types of nature-related elements do you have in your outdoor learning area or are used for outdoor activities (e.g., flower garden, bird feeder, compost pile, magnifying glasses, etc.)?	3.72***	3.74***
How would you describe your present level of environmental sensitivity and/or concern?	3.80****	4.25****

*Mean score of responses; based on a scale of 1 to 5 (1 = not at all ; 5 = very much), indicating to what extent this statement matched participant's current feelings and/or thoughts (N for Survey I = 25; N for Survey III = 22)

**Percent of "yes" responses from usuable returns (N for Survey I = 25; N for Survey II = 21)

***Mean score of responses, indicating number of different types of EE materials

****Mean score of responses; based on a scale of 1 to 5 (1 = very low; 2 = low; 3 = moderate; 4 = fairly high; 5 = high); (N for Survey I = 25; N for Survey III = 22)

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